Contents

VOLUME 26, ISSUE 1, MARCH 2001
Published 6 March 2001

MICHAEL T. SIVA-JOTHY, YOSHITAKA TSUBAKI, ROWAN E. HOOPER and STEWART J. PLAISTOW
Investment in immune function under chronic and acute immune challenge in an insect 1–5

KEIICHI HONDA, HISASHI OMURA, NANAO HAYASHI, FUMIKO ABE and TATSUO YAMAUCHI
Oviposition-stimulatory activity of phenanthroindolizidine alkaloids of host-plant origin to a danaid butterfly, *Ideopsis similis* 6–10

ROY PHITAYAKORN, GREGORY P. BENNETT and SUSAN M. RANKIN
Quantification of cockroach allatostatin-like peptide and its myotropic effects in males of the earwig *Euborellia annulipes* 11–17

D. LAVY, M. J. VAN RIJN, H. R. ZOOMER and H. A. VERHOEF
Dietary effects on growth, reproduction, body composition and stress resistance in the terrestrial isopods *Oniscus asellus* and *Porcellio scaber* 18–25

E. N. BARATA and J. ARAÚJO
Olfactory orientation responses of the eucalyptus woodborer, *Phoracantha semipunctata*, to host plant in a wind tunnel 26–37

ANJA D. LACHMANN and DANIEL R. PAPAJ
Effect of host stimuli on ovariole development in the walnut fly, *Rhagoletis juglandis* (Diptera, Tephritidae) 38–48

GÜNTER WITEK and KLAUS H. HOFFMANN
Immunological evidence for FGLamide- and W^2W^9-allatostatins in the ovary of *Gryllus bimaculatus* (Ensifera, Gryllidae) 49–57

TRINE BILDE and SØREN TOFT
The value of three cereal aphid species as food for a generalist predator 58–68

KYE CHUNG , JUNWEI ZHU, JENNIFER HARRIS, SAMUEL A. OCHIENG and THOMAS C. BAKER
Electroantennogram responses of a parasitic wasp, *Microplitis croceipes*, to host-related volatile and anthropogenic compounds 69–77

C. S. BRENT and J. F. A. TRANIELLO
Social influence of larvae on ovarian maturation in primary and secondary reproductives of the dampwood termite *Zootermopsis angusticollis* 78–85

T. L. WILKINSON and H. ISHIKAWA
On the functional significance of symbiotic microorganisms in the Homoptera: a comparative study of *Acyrthosiphon pisum* and *Nilaparvata lugens* 86–93

Announcement 94

VOLUME 26, NUMBER 2, JUNE 2001
Published 7 June 2001

YORAM YERUSHALMI, ERAN TAUBER and MEIR PAUL PENER
Phase polymorphism in *Locusta migratoria* : the relative effects of geographic strains and albinism on morphometrics 95–105

CARMEN QUERO, HENRY Y. FADAMIRO and THOMAS C. BAKER
Responses of male *Helicoverpa zea* to single pulses of sex pheromone and behavioural antagonist 106–115

AI FUJITA, ISAMU SHIMIZU and TAKUYA ABE
Distribution of lysozyme and protease, and amino acid concentration in the guts of a wood-feeding termite, *Reticulitermes speratus* (Kolbe): possible digestion of symbiont bacteria transferred by trophallaxis 116–123

TEUN DEKKER, WILLEM TAKKEN and RING T. CARDÉ
Structure of host-odour plumes influences catch of *Anopheles gambiae s.s.* and *Aedes aegypti* in a dual-choice olfactometer 124–134

J.-F. DAVID and G. VANNIER
Changes in desiccation resistance during development in the millipede *Polydesmus angustus* 135–141

M. A. H. BRAKS, J. MEIJERINK and W. TAKKEN
The response of the malaria mosquito, *Anopheles gambiae*, to two components of human sweat, ammonia and L-lactic acid, in an olfactometer 142–148

RICHARD J. HOPKINS and JOOP J. A. VAN LOON
The effect of host acceptability on oviposition and egg accumulation by the small white butterfly, *Pieris rapae* 149–157

AARE KUUSIK, URMAS TARTES, ALO VANATOA, KÜLLI HIIESAAR and LULLE METSPALU
Body movements and their role as triggers of heartbeats in pupae of the Colorado potato beetle *Leptinotarsa decemlineata* 158–164

W. O. H. HUGHES, P. E. HOWSE, E. F. VILELA and D. GOULSON
The response of grass-cutting ants to natural and synthetic versions of their alarm pheromone 165–172

MAJID SHAFIEI, ARMIN P. MOCZEK and H. FREDERIK NIJHOUT
Food availability controls the onset of metamorphosis in the dung beetle *Onthophagus taurus* (Coleoptera: Scarabaeidae) 173–180

NEIL AUDSLEY, ROBERT J. WEAVER and JOHN P. EDWARDS
In vivo effects of *Manduca sexta* allatostatin and allatotropin on larvae of the tomato moth, *Lacanobia oleracea* 181–188

VOLUME 26, NUMBER 3, SEPTEMBER 2001
Published 10 September 2001

FREDERIC MATHIEU, VERONIQUE GAUDICHON, LUC OLIVIER BRUN and BRIGITTE FRÉROT
Effect of physiological status on olfactory and visual responses of female *Hypothenemus hampei* during host plant colonization 189–193

GLEN POWELL and JIM HARDIE
A potent, morph-specific parturition stimulant in the overwintering host plant of the black bean aphid, *Aphis fabae* 194–201

J. P. SANDSTRÖM and N. A. MORAN
Amino acid budgets in three aphid species using the same host plant 202–211

RICHARD WALL and PAUL FISHER
Visual and olfactory cue interaction in resource-location by the blowfly, *Lucilia sericata* 212–218

LAURA L. PHELAN, ZACHARY A. RODD, HELMUT V. B. HIRSCH and ROBERT A. ROSELLINI
Exposure to cold: aversive Pavlovian conditioning in individual *Drosophila melanogaster* 219–224

T. L. WILKINSON, L. B. MINTO and A. E. DOUGLAS
Amino acids as respiratory substrates in aphids: an analysis of *Aphis fabae* reared on plants and diets 225–228

GAY C. MARRIS, ROBERT J. WEAVER, JULIE BELL and JOHN P. EDWARDS
Venom from the ectoparasitoid wasp *Eulophus pennicornis* disrupts host ecdysteroid production by regulating host prothoracic gland activity 229–238

COLIN S. BRENT and JAMES F. A. TRANIELLO
Influence of sex-specific stimuli on ovarian maturation in primary and secondary reproductives of the dampwood termite *Zootermopsis angusticollis* 239–247

MOGENS GISSEL NIELSEN
Energetic cost of foraging in the ant *Rhytidoponera aurata* in tropical Australia 248–253

D. KOEDAM, H. H. W. VELTHUIS, M. R. DOHMEN and V. L. IMPERATRIZ-FONSECA
The behaviour of laying workers and the morphology and viability of their eggs in *Melipona bicolor bicolor* 254–259

WOLF U. BLANCHENHORN, CORNELIA HENSELER, DIETER U. BURKHARD and HANS Briegel
Summer decline in populations of the yellow dung fly: diapause or quiescence? 260–265

J. BUTTERFIELD, J. B. WHITTAKER and C. A. FIELDING
Control of the flexible annual/biennial life cycle of the heather psyllid *Strophingia ericae* 266–274

ALAIN LENOIR, ABRAHAM HEFETZ, TOVIT SIMON and VICTORIA SOROKER
Comparative dynamics of gestalt odour formation in two ant species *Camponotus fellah* and *Aphaenogaster senilis* (Hymenoptera: Formicidae) 275–283

Corrigendum 283

VOLUME 26, NUMBER 4, DECEMBER 2001
Published 7 December 2001

Obituary 285–286

A. Couty, S. J. Clark and G. M. Poppy
Are fecundity and longevity of female *Aphelinus abdominalis* affected by development in GNA-dosed *Macrosiphum euphorbiae*? 287–293

Raphaël Boulay, Linda M. Hooper-Bui and Joseph Woodring
Oviposition and oogenesis in virgin fire ant females *Solenopsis invicta* are associated with a high level of dopamine in the brain 294–299

Harald Jungnickel, Hayo H. W. Velthuis, Vera L. Imperatrix Fonseca and E. David Morgan
Chemical properties allow stingless bees to place their eggs upright on liquid larval food 300–305

Sabine Keil, Hainan Gu and Silvia Dorn
Diel patterns of locomotor activity in *Cydia pomonella*: age and sex related differences and effects of insect hormone mimics 306–314

Jens Rolff, Pia Braune and Michael T. Siva-Jothy
Ectoparasites do not affect ejaculate volume in the dragonfly *Coenagrion puella* 315–319

Vladimir Košťál, Jan Havelka and Petr Šimek
Low-temperature storage and cold hardiness in two populations of the predatory midge *Aphidoletes aphidimyza*, differing in diapause intensity 320–328

Nikos E. Roditakis and Michael G. Karandinos
Effects of photoperiod and temperature on pupal diapause induction of grape berry moth *Lobesia botrana* 329–340

Nicholas W. Calderone and Sisi Lin
Behavioural responses of *Varroa destructor* (Acari: Varroidae) to extracts of larvae, cocoons and brood food of worker and drone honey bees, *Apis mellifera* (Hymenoptera: Apidae) 341–350

Georges Pétavy, Brigitte Moreteau, Patricia Gibert, Jean-Philippe Morin and Jean R. David
Phenotypic plasticity of body size in *Drosophila*: effects of a daily periodicity of growth temperature in two sibling species 351–361

Caroline Martin, Erick Provost, Maurice Roux, Claude Bruchou, Didier Crauser, Jean-Luc Clement and Yves Le Conte
Resistance of the honey bee, *Aphis mellifera* to the acarian parasite *Varroa destructor*: behavioural and electroantennographic data 362–370

Jack Kent Jr and Mary Ann Rankin
Heritability and physiological correlates of migratory tendency in the grasshopper *Melanoplus sanguinipes* 371–380

Alan Hern and Silvia Dorn
Statistical modelling of insect behavioural responses in relation to the chemical composition of test extracts 381–390

Author and keyword index 391–392